

**Presentation by**  
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**Las Vegas, NV**  
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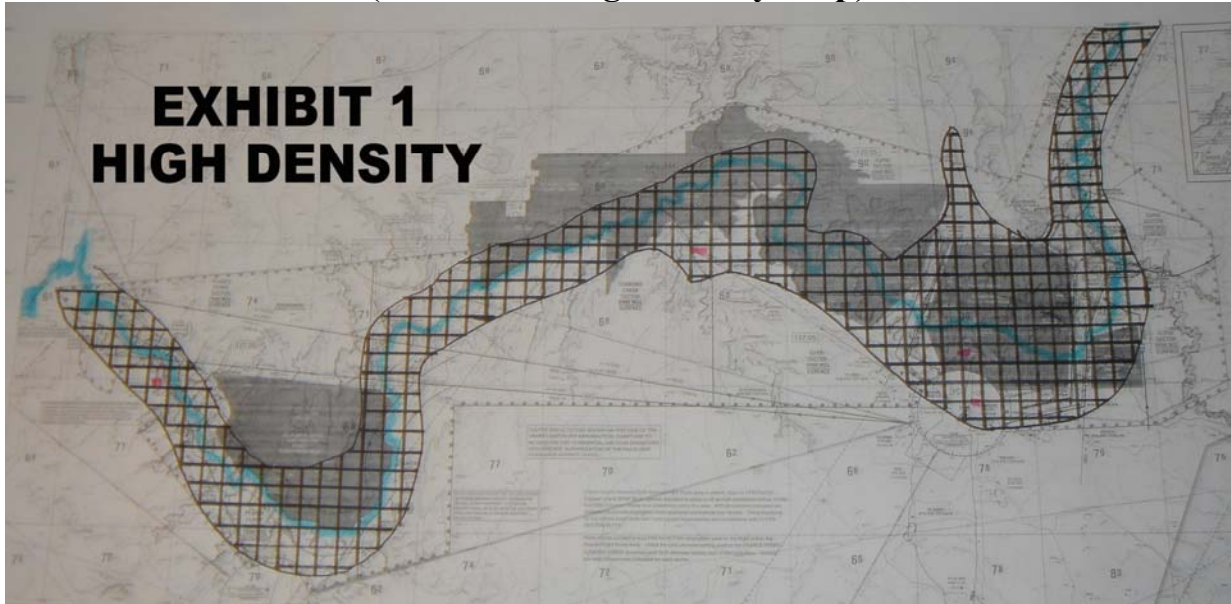
Recognizing the fact that Grand Canyon scenic tour flight operations currently comply with the Nation Park Service target goal of less than 50% impacted, there is a temptation to be greedy and ask for proposed changes that would bring flight activity up to the edge of the goal. The same temptation exists for those who are adverse to flights. Their temptation is to make proposals that are so significantly adverse to flight operations that they introduce safety issues and provisions that are not financially or practically feasible.

Rather than take any such position, I have endeavored and I trust everyone will endeavor to be sensitive to each other's needs and goals. I intend to be content to live within the parameters of where we are now but with some minor adjustments to mitigate those past changes that have had profound negative impact on flightseeing.

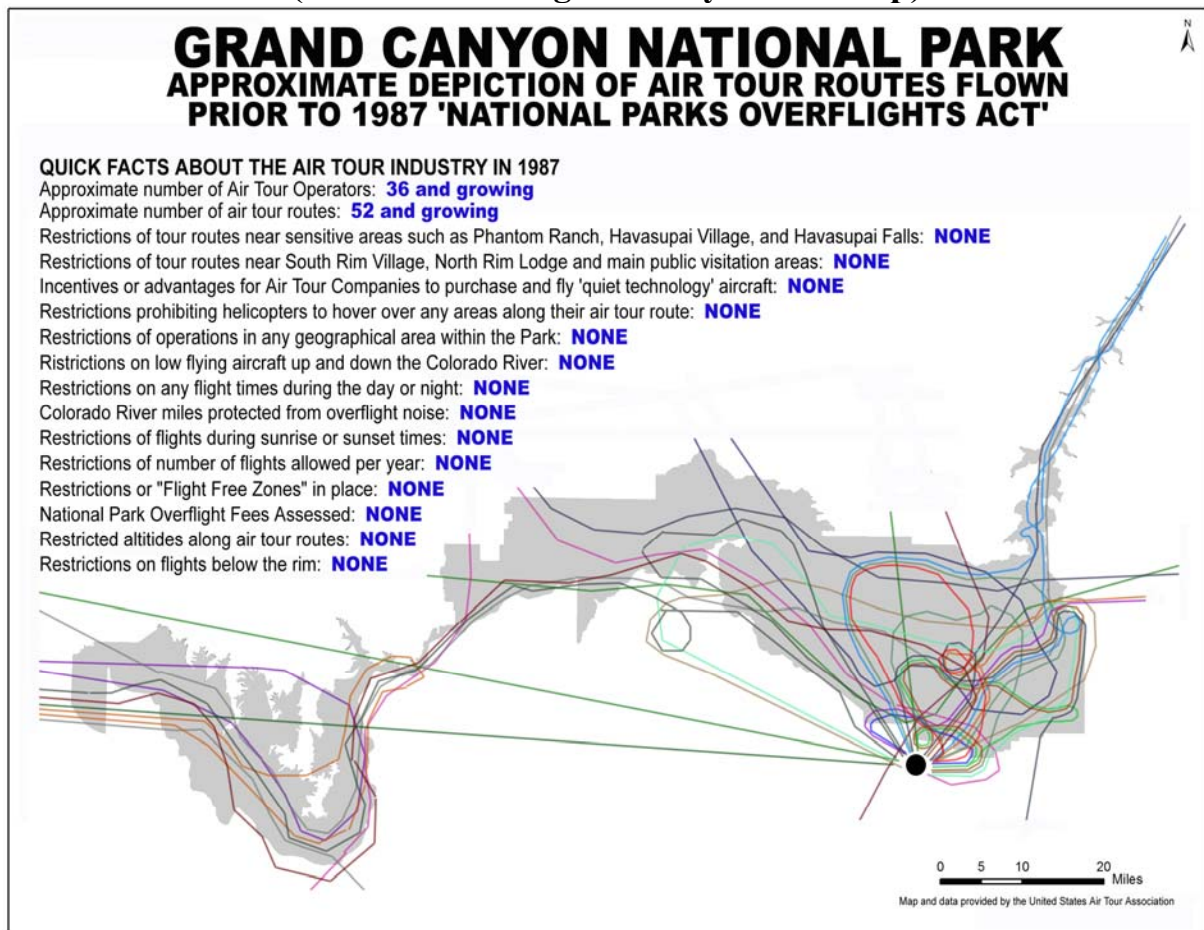
I have endeavored to study each situation of conflict in the Canyon with careful and sensitive thought to see what changes might be made to further improve the already conforming operations. This is my goal for now and will continue to be my goal in the future.

Around the timeframe of 1985, air tour operators, for the first time, began to recognize and admit that their actions were actually having a significant detrimental affect on the experience of many visitors at Grand Canyon National Park (GCNP). At that time, aircraft were flying at all altitude levels and over all portions of the National Park. Flying was 'at will' in and out of sensitive areas. Thousands of flights were operated over the Grand Canyon Village area, major use trails and the scenic overlooks on the East and West Rim Drives. This impacted virtually all ground visitors at GCNP. Illustrated here on Exhibit 1 is a depiction of the areas of the Canyon that were impacted in 1987 at the time legislation was enacted.

(Exhibit 1 – High Density Map)



(Exhibit 1A – High Density Route Map)



In 1986, there was an attempt by flight operators to work with the Park Service to begin the process of changing routes in an effort to reduce impact on ground and river visitors. The flight profiles were changed, which in turn precipitated the tragic fatal mid-air collision over the Grand Canyon. The National Transportation Safety Board (NTSB), in its report regarding the mid-air collision, said that, **“Contributing to the accident was failure of the Federal Aviation Administration (FAA) to exercise its oversight responsibility over flight operations in the Grand Canyon airspace and the actions of the National Park Service to influence the selection of routes by Grand Canyon scenic air tour operators.”** Routes that are presently being utilized in the Grand Canyon have been considered carefully from the standpoint of safety, as well as minimizing impact on the Canyon, and have worked successfully for many years.

The mid-air collision together with the undeniable air tour aircraft noise impact on millions of visitors at the Grand Canyon was what precipitated the 1987 National Parks Overflights Act, commonly referred to as Public Law 100-91 (PL 100-91).

This legislation was written to address air tour conditions that existed in 1987, which were very different than today. The result of PL 100-91 was that flight operators worked hand-in-hand with the National Park Service and the FAA to establish routes that had the least impact on the Grand Canyon visitor from the point of view of the National Park Service and to its satisfaction. Subsequent to that time, some minor and many major changes to flight operations have taken place on both the West and East End of the Grand Canyon (SFAR 50-1, SFAR 50-2, curfews, caps on flights, etc.). The following is a short film from the early 1980s which illustrates the type of tours that were then given before PL 100-91 was passed. **(Exhibit 2 – 1980’s Promotional film)**

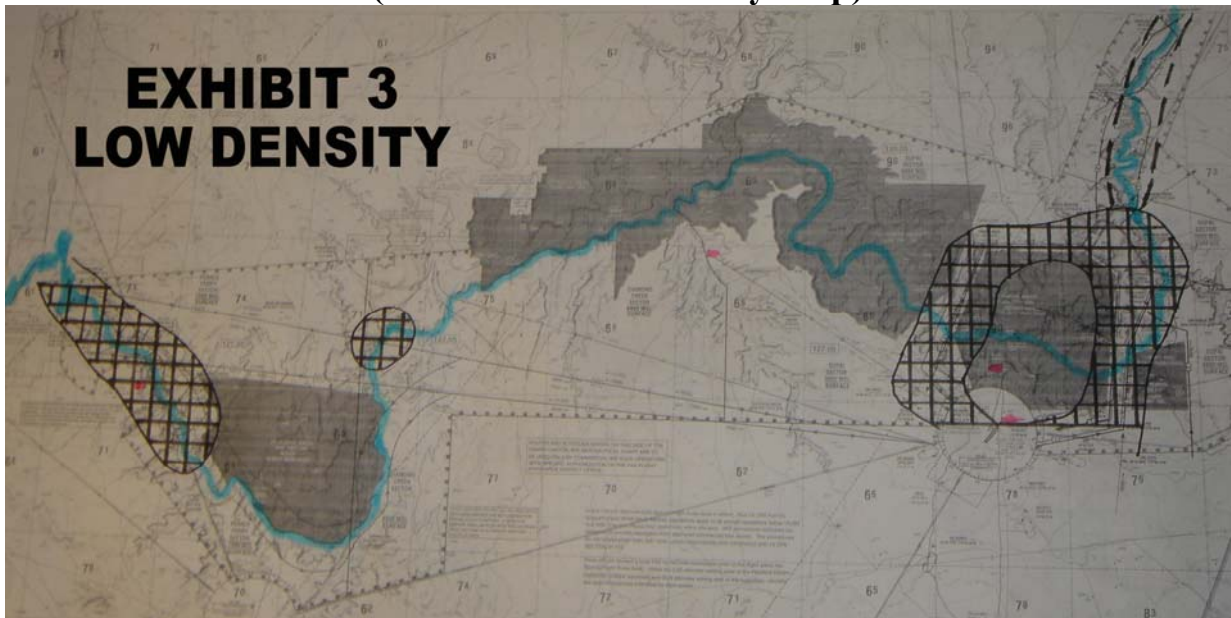
One of the most significant results to Grand Canyon flightseeing from these rules has been the reduction in the growing number of air tour businesses [from 36 to 9; a 75% reduction]. This has resulted in the loss of thousands of overflights of the Grand Canyon. Although some of the allocations were preserved by other operators, many of them were lost by bankruptcies and other business failures. These were largely due to the loss of economic viability as a result of reduced air tour opportunities at Grand Canyon. Those lost opportunities included the elimination of a scenic flight tour from Las Vegas combined with the East Canyon curfews, which in some cases cost operators up to 30% of their business revenues.

The National Park Service established in 1994 its definition of “substantial restoration of natural quiet”. Its target goal was set as 50% of the National Park quiet for 75-100% of the day. Many members of the Grand Canyon Working Group (GCWG) are aware that there have been numerous attempts since 1987 to quantify the impact of sound generated by air tour flights over the Canyon to see if natural quiet could be restored.

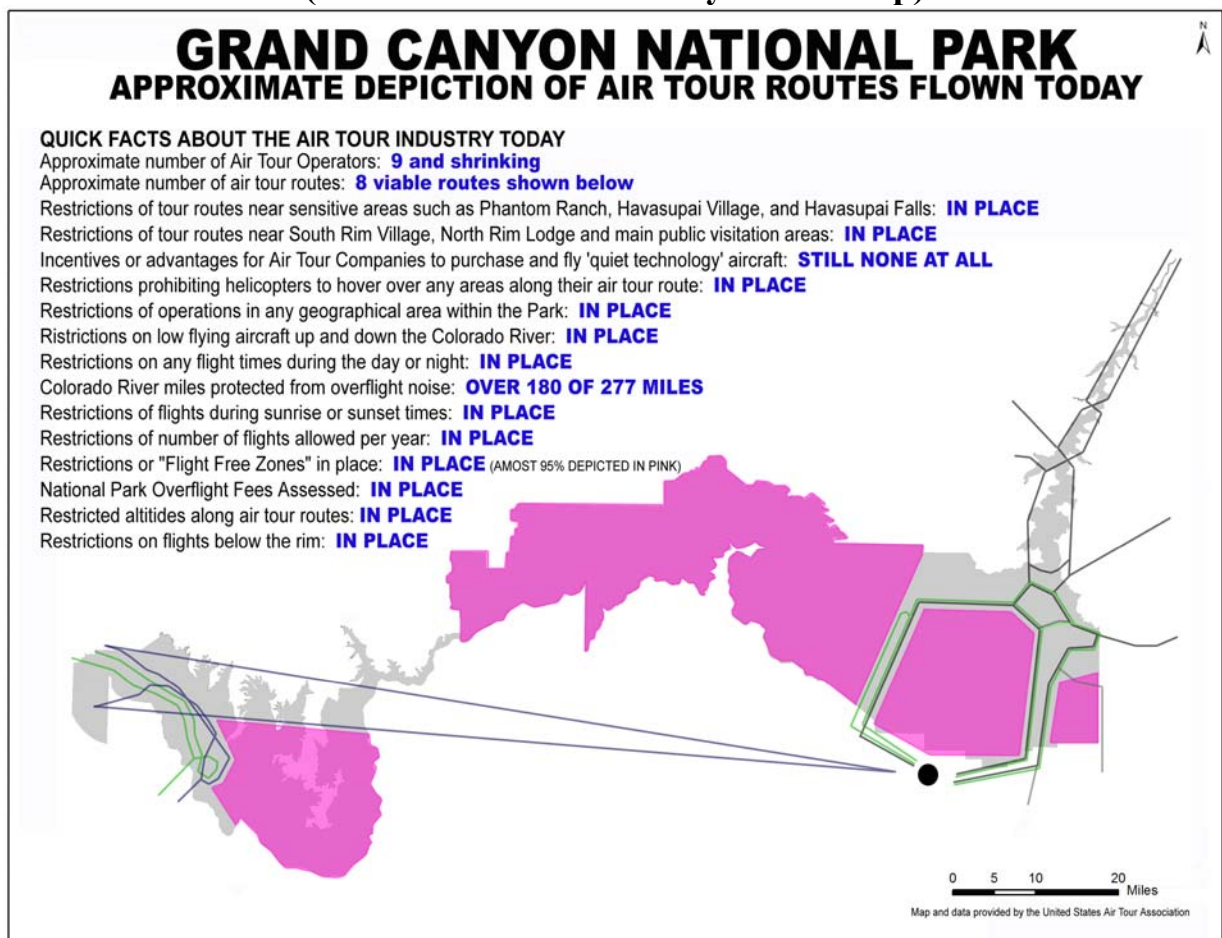


The aircraft flight operators in their current mode of flying have always believed that they've met the goals for natural quiet that the National Park Service had set forth.

(Exhibit 3 – Low Density Map)



(Exhibit 3B – Low Density Route Map)



This target goal, when discussed in passage of PL 100-91 in 1987 and established in 1994, was for the express purpose of regulating the scenic air tour industry for the noise it generated, and not other types of air traffic, such as high altitude overflights and general aviation. Importantly, this target goal was to achieve natural quiet for Park visitors, and not for non-human Park resources.

Over the years there has been much conjecture and debate over the noise modeling and what it included and what it did not include in its analysis. Fortunately for all, finally, we now have resounding agreement between the parties that the Volpe Initiative INM 6.2 is good science acceptable to all.

Yet, it is not perfect. INM 6.2 does not include any over-the-ground intenuation so the results are, therefore, conservative which is good and defensible.

Today, we remain at crossroads. Over the years many suggestions have been made in honest attempts by good people to relocate routes, change directions, eliminate routes, etc. The fact is that when routes were established as they are presently configured they were placed in the most reasonable locations to provide routes that could sustain viable flying businesses at prices the public could afford, while providing the least impact to the National Park. Air tour operators can generally live with the existing overflight regulations but any further significant reduction in flightseeing at Grand Canyon would damage beyond repair the fragile framework of cooperation that flight operators, National Park Service and FAA collectively have agreed upon. The routes as they are now configured provide operational safety, see and be seen, aircraft separation, safety alternatives, affordable flights, are financially sound, and have minimum impact to the Park. The changes proposed by others to date are not workable for the above reasons which can be reasonably further explained.

There are, however, some suggestions that could be made to improve short- and long-range prospects for improved sound conditions in the Canyon.

Following are 14 suggestions to the GCWG that I feel would be acceptable to flight operators, as well as hopefully acceptable to the National Park Service and the environmental community. It is important that we all feel comfortable in that we have done our best to create the kind of environment we are all looking for at the Grand Canyon National Park and an environment that serves all visitors, air and ground, to the Park.

*I submit herewith fourteen proposals that are achievable and should be generally and reasonably acceptable. They are as follows:*

1. The intent of the legislation (reconfirmed by the NPS in the 1994 Report to Congress) was aimed at restoring Park visitors' enjoyment (based on noticeability). Current regulators are attempting to utilize the standard of detection wherein a person sitting in total quietness (lowest ambient), not moving, concentrating on detecting an aircraft sound and then recording how long it lasts.

This is similar to a hearing test I recently took where I was concentrating on the detection of a series of sounds as they continued to fade. There were many times, as the sound was fading, that I couldn't really hear the sound but I suspected I was hearing the sound and pushed the recognition button. I can say with conviction that this kind of detection was not the premise under which PL 100-91 either was established or what the Park Service intended when it crafted its original regulations. Ambitious overworking of this issue has consistently and predictably evolved into more and more rigorous demands.

Considering the intent of the legislation and the fact that it is unlikely that we will be changing high altitude overflights at this time, I suggest as follows:

- A) We go back to the original interpretation utilizing one standard of sound noticeability for the entire Grand Canyon.*
  - B) The standard for the entire Canyon should be Ambient +10db as the sound datum for the entire National Park.*
2. The second obvious issue is the fact that when air tour aircraft noise is evaluated in the Park; it's based on a 12-hour day as opposed to a 24-hour day. This is unfair. Why shouldn't we get credit for the 12 hours a day in which we don't fly?

This is really a soft issue for the flight operations. The compelling point here is the fact that rhetoric always is about how many hours there is noise. There is never mention of the fact that the person who considers himself or herself a purest who wants to sit and contemplate natural quiet without tour aircraft can do so. A **"Fairness Doctrine"** would advise the public that there are 2 to 4 hours of quiet time before sunrise before air tour flights begin and 1 to 3 hours of quiet time before sunset after air tour flights end. Following sunset there is the silence of the dusk, the quietness of dark, and the silence of dawn. Let's promote these quiet times when the bustle of the day slows. This is a "Fairness Doctrine" and the lack of which is what makes the 12 hour model day unacceptable!

***I recommend that the 24-hour model day should be used and that the fairness doctrine should be promoted since nighttime and all shoulder quiet time is for the benefit of the ground user.***

3. Because of the imposition of the curfews, there are at least two hours and, for most of the year, as much as four hours of silence in the morning after dawn and in the evening before sunset. These times are those that are most precious to everyone who is going hiking, rafting, camping, or just viewing the Canyon. Many stories have been written about the silence of daybreak and sunset and I do believe and agree that these are treasures to be preserved. Although the aviation members of this committee do not agree business-wise with the curfews, they are content to accept them for reasons of quality and place as reasoned above, with minimal relief provided to regain part of the 30% reduction in air tour flights lost to curfews.

***I recommend that the summer flight hours from 8:00 AM to 6:00 PM be extended for 30 additional days in the spring and 30 additional days in the fall, or in the alternative 1 extra hour in the summer afternoon.***

4. Everyone recognizes that most noise generated in the East end of the Canyon comes from single engine piston airplanes, notably Cessna 207s. In their climb configuration, they must climb 1,500 ft to reach their highest flight altitude in order to cross the North Rim of the Park on the black<sup>1</sup>. This is a long sustained climb where the aircraft noise drones on and on possibly up to 6 minutes.

As an illustration, we have all heard airplanes take off and after attaining some altitude the pilot reduces the engine power and slows the propeller; as a result, the sound reduces significantly. To change altitude in flight, the pilot must increase the power setting and increase the engine propeller speed while in climb configuration.

***I recommend that single engine airplanes not meeting quiet aircraft standards enter the Grand Canyon on the Zuni Corridor at the altitude which is required to cross the North Rim. This would substantially reduce the amount of aircraft noise generated in the Zuni Corridor and East End of the Grand Canyon, especially around Point Imperial.***



5. Volpe modeling confirms that lowering operating altitudes and using terrain shielding can be very effective in reducing the footprint where sound can be noticed.

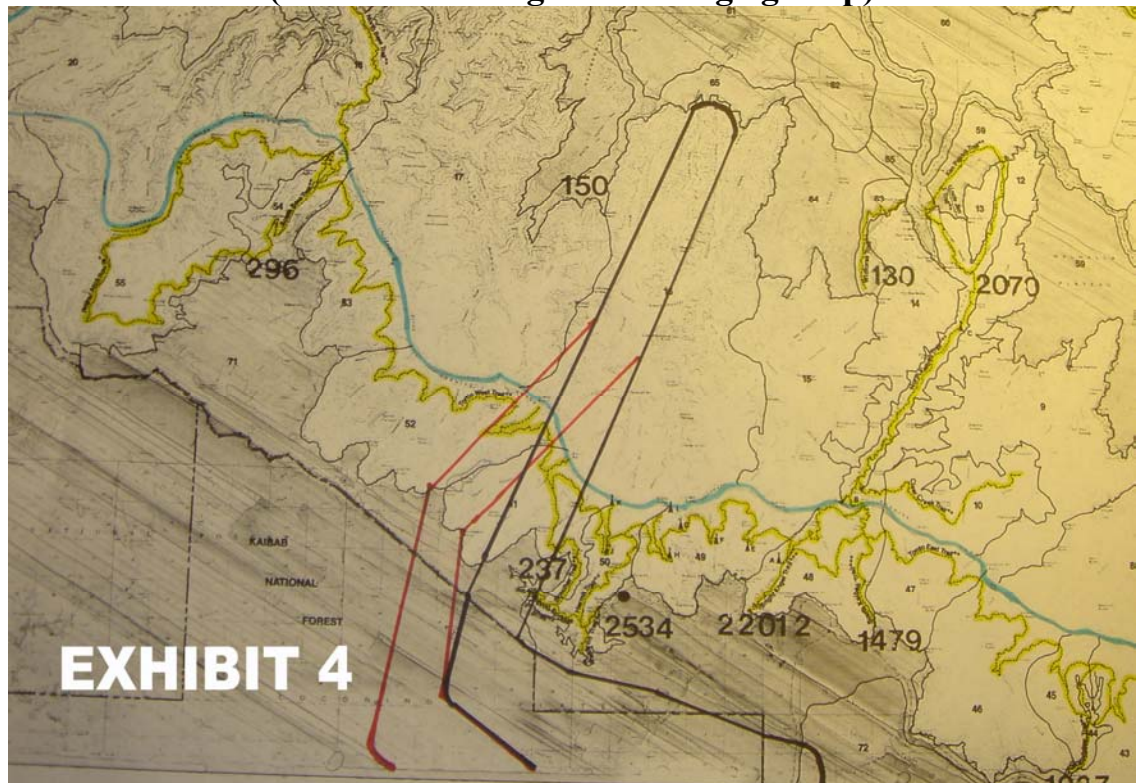
*I recommend that helicopters and airplanes entering the Dragon Corridor be allowed to adjust the tour altitude 2,000 feet lower than presently flown; this will utilize the shelter of the canyon walls to limit propagation of sound to adjoining canyons.*

This is a most effective way to contain the sound of the Dragon Corridor into a very small area of the Grand Canyon.

6. *I recommend moving the entrance and exit for air tour aircraft entering or leaving the Dragon Corridor be moved to the West approximately 2 miles.*

This will give more protection to the West Rim visitors. This change in combination with lower altitudes will make a profound improvement to the Hermits Rest Area and the associated local trail system.

**(Exhibit 4 – Dragon Exit Dogleg Map)**



7. When we had our October meeting of the GCWG at the Grand Canyon, one of our activities was to go to the West end of the Grand Canyon Drive



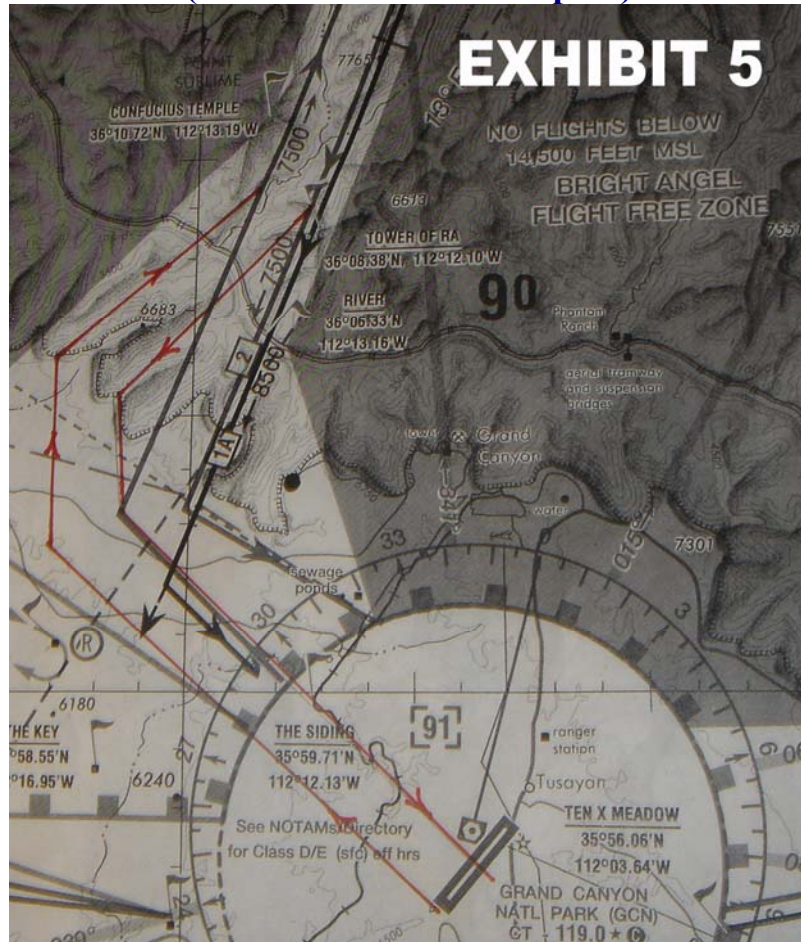
near Hermits Rest to see a sound recording device on site. As you may recall, we heard a number of aircraft of which some were airplanes, some were helicopters, and one was a National Park Service helicopter. The predominant helicopter sound came from air tour aircraft that were flying parallel to the South Border Road of the Park going from the Dragon exit to the airport. The aircraft were flying this route to avoid one rural residence at RaWell.

The committee members will recall the compelling speech made by the gentleman who lived there. I had no idea what he was going to say, but he supported the flights with his “quietness and peace come from within” statement. We have studied some alternatives and believe there may be a workable solution that will avoid RaWell and bring peace to the West Rim Drive.

*I recommend that we establish new routes of approach and departure from the airport to and from the Dragon Corridor flying south of the Ra Well residence in order to enter the Canyon on a more northerly bearing rather than parallel to the National Park boundary.*

This change would eliminate the bulk of sounds that we hear on the West end and together with the relocation of the entrance to the Dragon (as recommended in Item 6) would provide significant relief to the West Rim Drive and Hermits Basin.

(Exhibit 5 – Rim to Airport)



8. I believe that there should be better public recognition that the Dragon Corridor is a location where aircraft fly.

During the past 20 years of the 80 years of flying air tours in the Grand Canyon, the air tour industry has compromised on a regular basis. It began in 1987, which caused the mid-air collision, and has continued through route deletions, curfews, caps, etc. There has never been any change or compromise to the land users' practices.

*I recommend that any trail under the Dragon Corridor either be closed during air tour operational times or closed altogether, or in the alternative all hikers should be educated as follows:*

- A) The trails should be prominently posted explaining that this small area of the canyon during some hours of the day is dedicated to the aerial Park visitor.*
- B) An awareness program, including signage, handouts, advice, etc. to hikers should be provided. The awareness program should*

*present the “Fairness Doctrine” (Recommendation #2) featuring quiet times from tour aircraft flights for the benefit of the ground visitor.*

- C) Signage should be posted to educate the public that the limited aircraft corridors are the reasonable accommodation given for the Canyon whose length is about 1/12 of the width of the whole United States. Again, the public should be advised of the quiet times.*
- D) After relocation of flight routes, Only one trail is significantly impacted for approximately 8-10 hours daily. This is a very reasonable accommodation.*
- E) The National Park Service should educate visitors as to which trails are least impacted or not impacted at all by tour aircraft.*

9. River running is another great way to see the Canyon. Therefore, it is important that operators and/or individual boatmen who are floating the Grand Canyon recognize that they must also cooperate to improve soundscape impact.

*I recommend that river runners not be allowed to begin setting up camp below the Dragon Corridor until 30 minutes before curfew begins and must leave those campsites 30 minutes after curfew ends, so as to effectively mitigate any chance of river runners being bothered by air tour flights.*

It would be helpful to have a sign to this regard at any effected campsite.

10. There are many river runners flown out of and into the canyon at Toroweep Overlook utilizing the Tuweep or Bar 10 airports.

*I recommend that schedules be prepared and shared with the National Park Service to allow it the opportunity to pass the helicopter activity information to the boating community.*

11. It is important that over time we progress toward having all air tour aircraft employ quiet aircraft technology while operating over the Grand Canyon.

I have also been advised by manufacturers that the next generation of aircraft (propeller and rotor) will be approximately 4 to 6 db quieter. Technology is in our favor for the future.

***I recommend that over a 10 year period or some mutually acceptable schedule that all aircraft be converted to quiet technology aircraft.***

This change would be a tremendous financial burden on the operators; however, it would go a long way toward further reducing air tour noise impact and/or providing for more people to see the Canyon by air without increasing cumulative air tour sound impact.

12. The original 1987 legislation, PL 100-91, recognized that quiet aircraft might be important in achieving substantial restoration of natural quiet. PL 100-91 directed this to be studied. In 1994, NPS, in its report to Congress, confirmed that quiet aircraft were part of the solution. In 2000, the National Parks Air Tour Management Act directed that quiet aircraft incentives be established to encourage air tour operators to employ them.

***I recommend incentives as follows:***

***A) An important incentive for quiet technology aircraft should be forgiveness of the overflight fee.*** This would assist the operators in a small way to amortize their incredibly large new investments of capital in equipment and would be a real incentive to speed up the conversion to quiet technology aircraft.

***B) New routes should be provided for quiet technology aircraft.***

These aircraft could be operated in such a manner so as to not exceed the National Park Service goal to protect the Park 50% or more, 75% to 100% of the time. Additional routes would allow for some growth to those operators who are serious about keeping the noise signatures down. As an example:

1. As an incentive during the winter months when the North Rim is closed, quiet technology aircraft should be able to fly across the front of the North Rim.
2. There are many visitors to the South Rim of the Grand Canyon who wish to see the ancient cliff dwellings near Point Sublime. There is no reasonable way this can be achieved during the winter months. As a benefit to the visitor, passengers aboard quiet helicopters should be permitted to view the cliff dwellings during the period of time when the North Rim is closed.
3. Blue Direct North and Blue Direct South may be combined into one route with a one-way quiet aircraft incentive route near the Twin Peaks Region allowing a descend to rim level for a short scenic flight following the river for about 20 miles, then resuming to the Blue Direct route.



By combining Blue Direct North and South, it would create many more miles of silence from aircraft sounds to the advantage of GCNP and the Hualapai Nation. This proposal would also continue to protect Havasupai tribal lands. Operators of quiet aircraft coming from Las Vegas would then have at least restored a mini-tour of Grand Canyon.

13. The “Fly Neighborly” Program established by Helicopter Association International (HAI) has been a standard in the industry for many years. However, in the last year or so the helicopter manufacturers have taken greater interest in the Fly Neighborly concept and HAI has had a renewed interest in developing Fly Neighborly. The manufacturers have now determined what the quietest modes are for each type of aircraft, where the aircraft sounds are the greatest, and how to minimize the noise footprint in any given configuration of flight.

*I recommend that the Grand Canyon flight operators establish Fly Neighborly procedures for each of the flight characteristics that are used on overflights of the Canyon from take-off to landing, and that training be conducted to ascertain that the pilots are doing the best possible in this regard.*

Each operator should establish a Sound Officer who trains and monitors the style of flying that the pilots utilize to ensure implementation.

14. There has been an effective Flight Following and Safety program initiated in Alaska over the past 7 years; the program is called Capstone II.

Aircraft utilizing Capstone II, in summary, have a panel mounted GPS, a multi-function display, and the universal access transceiver which provides ground monitoring of the location of the aircraft and its route at all times. It also has continuous altitude reporting, terrain avoidance for the aircraft, and the ability to see other aircraft traffic in the vicinity. I believe this advancement of equipment would be welcome by everyone for it can provide compliance monitoring as well as enhanced safety features minimizing the possibility of a mid-air collision, or recovery from inadvertent meteorological conditions (IMC).

*I recommend that the Grand Canyon Working Group endeavor to partner with the FAA, and within 24 months establish a Capstone II-type project for the Grand Canyon.*

The program could be an FAA funded project provided as a demonstration for National Parks.

In conclusion, not withstanding other aircraft operations, I am pleased to say that air touring operations meet the goals set by the National Park Service as intended by Congress for restoration of natural quiet and visitor experience. It is our sincere commitment to continually improve both the experience of the air and ground visitor of this very special place.

**Viva La Park!**